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Journey of an Information System in Railway Industry development approach through an enterprise framework

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ABSTRACT

An enterprise framework based on the philosophy research approach to Information System (IS) features a holistic view in an industry that allows room for technological advancement, an industry with increasing expectations and demands for IS drives towards a more integrated framework and rethinking of the concept of delivering insightful outcomes. The specific features of IS in this study focus on the information criteria for the daily assignment of the railway industry operations through an industry enterprise framework. The study objective is to provide a comprehensive understanding of emerging knowledge from structuring IS and enterprise framework stages and their mashup characteristics in designing a model-driven development framework. The outcome will be a design of a strategic performance framework for a typical strategic performance application as the most vital outcome indicators, to focus on understanding the baseline of technology revolution (Industry Revolution 5.0) achievement to measure the transformation expected and the railway industry evaluation, based on the year-on-year target will be established. The usage of decision-making systems and strategic applications has increased massively to fulfill various kinds of purposes for organizations, businesses, and individuals. In this case, a high-quality decision-making system and strategic application are required to ensure it provides the intended functionalities.

KEYWORDS

enterprise framework, information system, practitioners, philosophers, railway industry

1. INTRODUCTION

In the context of industry management, decision-making is a common phenomenon that selects different alternatives for present circumstances and future courses of action [1]. However, it is difficult to accomplish due to the flexibility of strategic Information System (IS) requirements that can be confusing and easily misinterpreted [2]. This can lead to requirements-related problems such as incorrectness, incompleteness, and inconsistency. These errors in IS requirements will produce defective decision-making that can lead to undesirable effects, which are not accepted by stakeholders [3]. Therefore, the decision-making IS requirements must fulfill basic quality attributes such as correctness, completeness, and consistency [4]. Motivated by these problems, the main goal of this study is to design a high-impact model to validate the IS requirements at the earliest stage of the decision-making process.

The most successful industry is the one that has the best information [5]. The industry is increasingly aware of the potential of information in sustaining their success and competitive

advantage [6]. Moreover, information has a value in decision making that creates clarity and updates the level of knowledge [7]. IS will provide information through analyzing and processing industry data that create useful information for decision making and ensure the future growth of the industry [8]. The study focused on utilizing a literature review to develop and extract a model-driven development framework based on the scenario for generic information and strategic performance of IS in the Railway Industry (RI). The study is aimed to determine the outcome of the objectives initiatives and the efforts to influence the outcome through IS, and RI to analyze the initiatives as the dynamic of all the Key Performance Indicator (KPI)'s for suppliers from strategy management.

The organization is stuck in the automation stage [9]. Many organizations have a legacy of isolated automated systems based on outdated technologies. They have made no real changes in the way they work or are organized. Their stage of IS development is not advanced enough to exploit the potential of transformation [10]. Digital disruption can be classified as a digital evolution that emerges due to daily activity that intimidates to obstruct, delay, or destroy the RI goals [11]. Therefore, we need to emerge knowledge from structuring an enterprise framework on the strategic elements and the most real that represent the actual changes that happen within the organization. Furthermore, we need to observe and understand the emerging knowledge from structuring IS their mashup characteristics, and the technological revolution as Industry Revolution 5.0 (IR5.0), that emphasizes the importance of digital transformation to look beyond the areas of RI and strategically respond in terms of utilizing and integrating IS scenarios in the context of IR5.0 framework development.

2. LITERATURE REVIEW

In the beginnings, Information System (IS) was identified to help achieve the strategic objectives and consequently provide the strategic results each theme desires. An IS is a paradigm that consists of communication theory through unique ways utilized throughout the organization [12]. Given this acknowledgment, IS is described as (1) data for accuracy and timing, (2) specific and organized, (3) conferring within a human context, and (4) understanding phenomena of behavior towards decision making. IS describes the phenomena of the Railway Industry (RI) as a signal of culture. As time goes by, IS makes memory to learn for effective performance [13]. A good definition or theory of IS describes as useful IS for understanding all cases happening in RI through IS phenomena in communication and information transfer [14]. Given several possible definitions for a concept, the better definition is usually the simpler and often broader one. Perhaps IS definition describes a phenomenon over the largest set of situations found in RI that leads to the birth of data [15].

Precise data and information lead towards the core of IS [16]. Imposing cultural interest in a RI discipline where the

field of IS in the context of human, organization, production, and retrieval of information is the information phenomenon [17]. Researchers are encouraged to understand the phenomena for the development of an IS and its growth in the RI [18]. IS establishes a mechanism of prior experience and learning recognition of the RI for operation in pioneering future technology through establishing a multi-functional process for existing capability and forecasting strategic industry needs for RI for understandable and useful form [19]. Therefore, to assemble, store, process, and deliver information within RI, one needs organizational informatics as a discipline combining IS, informatics, and management concepts for accessibility and usefulness.

2.1. Information system towards railway excellence

The transformation of the Railway Industry (RI) towards advanced operation and techniques with smart digital transformation technologies aims to generate digital railway excellence for analyzing, using, and communicating data to drive advanced intelligence action within RI. Moreover, it makes sense of information and proceeds to obtain operational excellence and organizational experience. The integration of digital information from various sources can drive railway excellence. In RI, the growth of digitalization has empowered strategic planning as high-impact initiatives, where data and intelligence is driven by the flow of information and action, as presented in Table 1.

Based on Table 1, the IS 5.0, AI and machine learning is classified as future or beyond IS as data analytics for IT managers, empirical researchers, and professionals to stride up and assist new thriving in the mechanism. Furthermore, it generates a strategic advantage for information and introduces advanced value into the RI towards technical communication. IS 5.0 yields information for RI to do their daily task smartly and precisely, at the proper time, in the proper situation. But another key enabler of IS 5.0 is digital transformation towards railway excellence that evolves its process. This enabler reaction can guide the whole RI facilitating and encouraging to transform the working culture. Moreover, organizations revolution to digital technologies to drive competitive edge, that directly influences the organization and integrating to its core platform technologies, as shown in Table 2.

Based on Table 2, the integrating core platform technologies in IS towards holistic digital evolution and key insights that can enable RI to visualize the strategy, analytics, and predictive insights to make smarter decisions. The utilization of the digital can enable RI to obtain insight into the railway environment, simulate practicable scenarios, and understand the influence of the technology revolution.

2.2. Underpinning theory

According to [20] by using Activity Theory as the baseline information framework we can analyze the industry to understand the readiness of new technology innovation. Activity Theory is adopted and adapted for an activity system to assist in analyzing the use of IS in RI. The basic premise of



Table 1. The paradigm of Information System computing

| Real-Time | 1980s | 1990s | 2000s | 2020s | Beyond |
|-------------------------------|--|--|---|--|--|
| Information Revolution Phases | Information 1.0 (Industry 1.0) Enterprise (Static) | Information 2.0 (Industry 2.0) Multi-Enterprise (Transaction) | Information 3.0 (Industry 3.0) Web (Social) | Information 4.0 (Industry 4.0) Internet of Things (Mobile) | Information 5.0 (Industry 5.0) Artificial Intelligence (AI) & Machine Learning (Semantic) |
| IS | Ad Hoc Reporting (Web of Content) | Analytics (Web of Communication) | Data Mining Insight (Web of context) | Predictive Analytics (Web of Things) | Prescriptive Analytics (Web of Thoughts) |
| Data Capture | Data in context becoming information (Mass production & industrialization) | Information plus insight becomes knowledge (Production line) | Knowledge plus foresight or intuition becomes intelligence (Computers and Robotics) | Intelligence in the right situation drives better decisions (Inter-connectivity) | Intelligent Decisions (Blockchain Technology) |
| Organization Application | Transaction Process System (TPS) | Management Information System (MIS) | Decision Support System (DSS) or KM | Executive IS (EIS) | Enterprise Architecture (EA) |

Table 2. The integrating core platform technologies

| Integrating Technology | Core Platform | Technology Revolution |
|---|---|--|
| Organization’s commons (Intelligence Apps) | Productivity (Describes the organization climate and pool of resources on carrying out their operations by communications infrastructure and mimic human behavior). | Physical to digital (Apprehend information from the physical world and generate a digital record from physical data). |
| Take-off factors (Business Driver Apps) | Flexibility (Help to transform a technological advance into useable applications) | |
| Transfer factors (Including wider changes in the behavior of organizations) | Speed (Enable an IS to become far more deeply ingrained in an organization) | Digital to digital (Share information and expose meaningful insights utilizing scenario analysis, advanced analytics, and AI) |
| Innovation dynamo (Innovation Driver Apps) | Quality (The presence of technology clusters and a strong IS culture within an organization as contributing to the growth of innovation) | Digital to physical (Appertain algorithms to interpret digital world determination to functional data, to stimulant action and change in the physical world) |

the theory is extended from human action to encompass a nominal significant context for an activity within the IS [21]. Activity Theory is a type of doing directed to an object, as shown in Fig. 1.

Based on Fig. 1, the Activity Theory shows the tools, objects, and subjects are mutually related that must be in dynamic equilibrium with each other to complete the identification of output for potentials IS functions. Previous scholars have stated the relationship of three (3) components, interacting with each other as presented in Table 3.

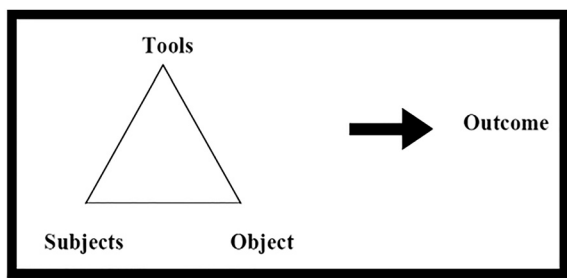


Fig. 1. An overview activity theory

Table 3 summarizes the Activity Theory elements being composed of three (3) interrelated parameters, closely interact with one another, changes to some of the elements will necessitate changes to the others to usher their aspiration and venture back into alignment. Activity theory is in a state of constant change because they are in constant planning to source for venture plans [25]. A software application used in IS in RI may possess tools like decision-making features that assist individual actions. Besides, the software application can enhance coordination between various actors by making available shared industry information. Moreover, computer systems can also function as a communication conduit between activities in activity theory. Also, adopting Stafford Beer’s Viable System Model (VSM) that blended the field of cybernetics with management to formulate an organizational system that identifies organizational problems and processes, as shown in Table 4.

Based on Table 4, the adoption of VSM into the model-driven development framework as the management tool is used to determine the viability of an organization. VSM emphasis repeating each function at every level of interest and supporting the depiction of recursion that diagnoses a

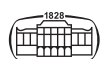


Table 3. Activity Theory component

| Elements | Definition | References |
|---|--|------------|
| Tools (Activity-capacity to sustain IS) | The use of technology for the decision-making process in the industry is governed by motive. To build a monitoring system. | [22] |
| Object (Actions-appropriateness of IT) | To support the overall decision-making outcomes governed by goals. To lay the foundations of IS in the monitoring system. | [23] |
| Subjects (Operations-demand for IT and impacts) | Focus on the content and structure of the industry governed by conditions. The use of a dashboard for the monitoring system. | [24] |

Table 4. The adoption of VSM into the model-driven development framework

| VSM | System 1 (Implementation) | System 2 (Coordination) | System 3 (Control) | System 4 (Intelligence) | System 5 (Policy) |
|-------------------------------|---|---|---|--|--|
| Classification | Focuses on the primary operation of the organization. | Coordinate all the activities at the operation level. | Viewing all the operations and controlling them. | Provides information regarding the organization in its current form | Composing all policy decisions within the organization |
| Elements of organizing system | An operation that organization focuses on the development and delivery of its outcomes. | | Management that controls operations for optimization. | An environment that surrounds the element function for adaptability, innovation, and future. | |
| Railway Themes | Accreditation Management | Human Resource Management | Quality Management | Strategic Management | Integrated RI |
| Railway Parameters | Managing materials from components and parts manufacturers. | Managing purchasing from major systems and sub-systems train integrators. | Managing sourcing from the final integrator-complete train. | Managing supply from industrial builders and manufacturers. | Insight and wisdom obtained for a real executive on strategic decision making. |
| References | [26] | [27] | [28] | [29] | [30] |

system in focusing their accountability and management. Yet, it aligns with the RI operating model to give a clear vision of viability and monitors the effectiveness of the whole system in meeting its objectives. Therefore, this model-driven development framework will be pre-assessed and associated with the IS in RI problem-solving model as presented in Fig. 2.

2.3. Enterprise framework approach

We propound the characteristics on the transition stages of IS in the context of IR5.0 on automation towards transformation stages, focusing on integration and simulation strategic planning process as innovative inclusion of sustainability development and IS elements and integrated with IR 5.0 approaches in designing the RI enterprise framework



Fig. 2. Enterprise framework of Information System in Railway Industry

in the context of IR5.0 perspectives. For this, we identify and define and determine the enterprise approach to the decision-making process as (a) Business Driven Organization, (b) Relevant Human Resource Skill Set, and (c) Technology for Humanities-Oriented. This enterprise approach can analyze the information or data for assisting decision-makers at various levels of RI that empower them to create a better decision-making process.

A) Business Driven Organization

We can define business-driven as a critical enabler that focuses on the analytics model that implements broad-based decisions for strong foundations in IS disciplines and emphasis on the functional activity for information retrieval, data analysis, and operational performance. We can identify and classify the analytics model as:

i. Decentralized Model

Every organization's role will retain analytics to empower a quick evaluation and performance results. The analytical need to be aligned to the business functions in providing immediate tactical inputs for a strategic view on generalizing the organization issues. The model navigates from top-down from the highest level with business goals as presented in Fig. 3.

ii. Shared Services or Centralized Model

Standardized processes and methodologies developed for better coordination within the business functions for shared





Fig. 3. Decentralized top-down model

analytics. Existing business functions with a logical desire to aid the whole business with the principle of execution and a broad analytics philosophy. The decision-making formation could enhance moderate analytical action and indicate the business goals as shown in Fig. 4.

iii. Independent Model

Standardized processes and methodologies developed for a cross-independent viewpoint within the business functions for shared analytics. Organizational functions with the managerial level that raise and outline the analytical for crucial key abilities. The decision-making formation could enhance the highest level of analytical action and indicate the business goals as shown in Fig. 5.

iv. Business Driven towards IS 5.0 Model

Aligning the right structure with technology and data platforms to support analytics capabilities for business functions. We embed analytics tools for quality reports, visualization, and performance through collecting, transforming, storing, and integrating analytics data sets for the decision-making process. Thus, embedding analytics capabilities to support the organization’s strategic goals with the



Fig. 4. Centralized analytical model

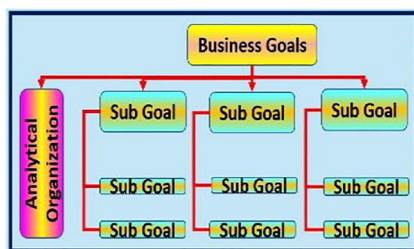


Fig. 5. Independent analytical model

business process for automation and optimizing business operations is shown in Fig. 6.

B) Relevant Human Resource Skill Set

Putting relevant human resource skill set into an organization environment enhances the organization’s decision making effort to manage the outcomes that enhance actionability [31]. Organizations must investigate a strategy that guides them for internal processes while preserving their operation for each practice. Perhaps, tracking human resource activities through a human resource IS will be effective and efficient for organizations [32]. Moreover, the relevant human resource skillset will indicate the information, expertise, and ability for the current technology trend that focuses on the high demand for technical knowledge and communication skills. The relevant human resource skillset with information review will create actionable insights for practical, and community for continuous digital transforming and future technology transformation [33].

Furthermore, the relevant human resource skill set processes information that is relevant and actionable for RI performance and integrates with the situation for changing its performance action accordingly. Moreover, determining the relevant human resource skill set requires a deeper understanding of IS 5.0 approaches for actionable insight and retrieving complex information of the RI performance. Therefore, we have examined what knowledge and skill requirements that are needed for an enterprise framework and stated them in Table 5.

Based on Table 5, the action plan for the human resource skillset must focus on the RI job scope, business objectives, and organization values. We need to bring new knowledge and skills into the organization through (1) modifying the hiring process that focuses on technology skills, (2) utilizing structured interviews through reducing biases and ensuring

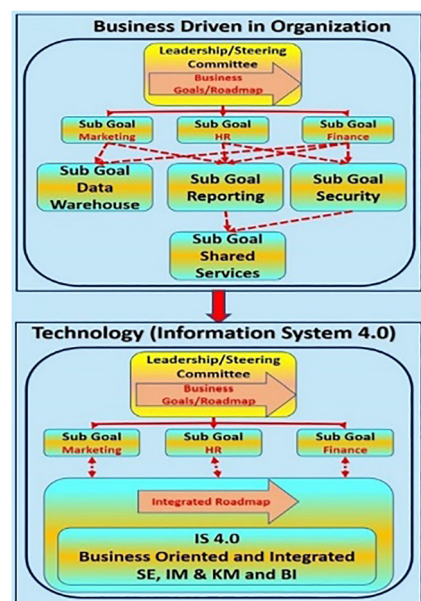


Fig. 6. Business driven model



Table 5. The action plan for human resource skill set

| Level | Analysis of Skill Gap | Required Skill Set | Action Plan |
|--|---|---|--|
| Individual (The skills that a job requires) | Poor performance needs some changes in the workforce duties, and also requires new skills for the new project. (Adaptability, creativity, and innovation, multi-tasking, and flexibility) | High-Excellent (Soft Skill and Technical Skill) | Training, mentoring initiatives, and succession planning |
| Team or Organization (The skill that requires to work on for an upcoming project) | Using new technologies, to overcome problems that meet business goals, and strategy shifts that require new skills. (Adaptability, creativity and innovation, multi-tasking, and flexibility) | High-Excellent (Soft Skill and Technical Skill) | Training programs, mentoring initiatives, and hiring. |

criteria for job-related scope, and (3) sourcing a workforce that utilizes effective sourcing techniques to find the right person for the right job. Knowing which skills your organization needs to grow as a business will help you hire and retain the right person for the job description.

C) Technology for Humanities-Oriented

The organization technology for the humanities-oriented landscape has been shifting so fast lately. Advance technology for humanities-oriented is focusing on cloud services and mobile software that link the business through IS paradigm. Organizations are structured around advancing the discipline of software engineering that focuses on complex system development [34]. The early structure of software engineering emphasized the structured programming of knowledge hiding and software design for the structured design of an organization's complexities issues [35]. Therefore, technology for humanities-oriented must focus on the (1) processing of data that results in the organization transactions, updates the operational database, and producing organization documents systematically, (2) bringing original technology contributions of thinking and learning for organizations, and (3) assisting organization through data evaluation for better insight directions. We have categorized technology for humanities-oriented through information process for directions and relation in decision making that emphasis on the analysis, aggregation, and visualization for assisting the organization management and

strategizing. Besides, it focuses on the information to comprise what organization leaders execute with the perception deriving from it [36]. Moreover, it implies the action and approach for information gathering and outlining the structure in assisting the decision-making process [21]. We have tabulated the technology for humanities-oriented in Table 6.

Based on Table 6, the technology for humanities-oriented depends on IS visualization for analyzing the output as graphs and reports for decision-makers. Humanities-Oriented Intelligence Technology IS 5.0 mechanism empowers the organization decision-makers to trigger their visualizations and reports to measure insightful opportunities and helps for better decision making from the perspective of strategic knowledge and innovation for the future-oriented goals. Thus, excellent qualities will shape the organization's workforce and culture towards technology for humanities-oriented in years to come. Besides the flow of information through the design and model has been laid out to meet the ISO9001, ISO14001 and OHSAS18001 standards that emphasize the design practice for the most comprehensive standards worldwide. Yet these information requirements demand the continuous monitoring and testing of the business-driven model as its capabilities adopt a strategy in supporting the future market growth in Malaysia for the RI. Moreover, the information quality requirements by the ISO 9001:2008 have specified the requirements and standards needed for a transition stage of information system flow to

Table 6. The technology for humanities-oriented

| Humanities Factors | Technology Oriented | Humanities-Oriented Intelligence Technology IS 5.0 |
|-------------------------------------|---|---|
| Intrapersonal (Communication Flow) | Competence, motivation, efficacy, and perceived control. (Competencies) | People-Knowledge background, learning attitude, motivation, and style. |
| Interactional (Knowledge Resources) | Decision-making, problem-solving, critical awareness, and leadership decisions. (Problems, challenges, and opportunities) | Processes-Innovation trends, market knowledge, organizational inputs, and risk tolerance. |
| Behavioral (Interaction Mechanisms) | Coping and participation. (Services) | Purposes- Future Internet and ICT progresses. |



build and secure the current business-driven model that creates a higher level of transparency throughout the RI in establishing a clear competitive advantage by a powerful and visible decision-making system, with a strategic application for an in-depth knowledge with certification regulations that meets the international reputation.

3. INFORMATION SYSTEM METHOD

A closely-develop enterprise framework can structure the mechanisms, insights, and dominant perceptions that are required to indicate the necessary verification to determine the achieving goals of an organization. Therefore, basic philosophical approaches or underpinnings of IS research paradigms need to be a focus on epistemology, ontology, and methodology as presented in Table 7.

Based on Table 7, the research paradigm for this study focuses on ontology as the method of contriving actuality, epistemology in the divergent formation of expertise of that materiality, and methodology in the research method carrying the ontological and epistemological perspectives. Therefore, strategize method will be a platform for structuring the rapid-changing technology for socio-economic development. Besides, this fundamental method will empower the organization to design an enterprise framework. Specific plan to increase the identification of suitable study for technology transfer to the IS in RI for high worth organizations and workforce. A clear, enterprise framework with proper methods needs to be designed in understanding how RI works and to identify the right metrics itself. At first, we will view the ontology perspective in designing an enterprise framework focusing on the information as the body of knowledge presented in Fig. 7.

Based on Fig. 7, the ontology perspective in designing an enterprise framework focuses on the information as the body of knowledge by implementing and maintaining a comprehensive control through monitoring the information creation as an ontology approach that identifies and employs

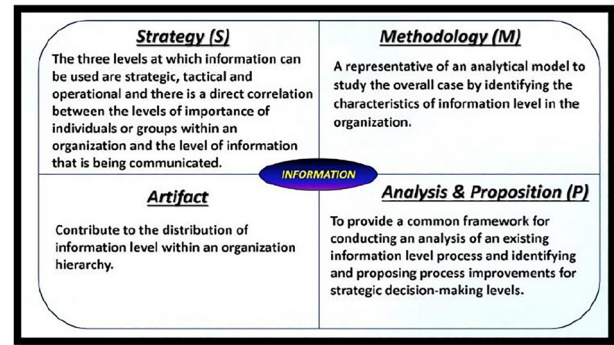


Fig. 7. The ontology perspective for Information System in Railway Industry

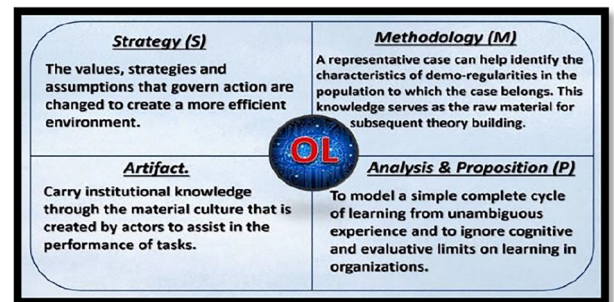


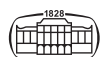
Fig. 8. The epistemology perspective for Information System in Railway Industry

the right information to create high-impact knowledge. The epistemology perspective in designing an enterprise framework focuses on the organization learning as the enabler shown in Fig. 8.

Based on Fig. 8, the epistemology perspective in designing an enterprise framework focuses on the organization learning as the enabler by ensuring that all the strategic goals are ready to forge forward and make the necessary adjustment and change through its knowledge in strategic planning elements

Table 7. The research paradigm

| Paradigm | Philosophy Perspective |
|--------------|---|
| Ontology | <p>a) Nominalism: Presume that social reality is comparative, and the social world is generally concepts, labels, and names that assist the individual structure reality. These labels are artificial inception. (How things are)</p> <p>b) Realism: Presume that the actual world has compact, intangible structures that exist irrespective of our labels. The social world prevails differently from the individual conception of it. The social world prevails as strongly as the physical world. (How things work)</p> |
| Epistemology | <p>a) Positivists: Believes that one can strive to predict and explain what arises in the community globe by perceptive for relationships and patterns linking people. They surmise one can test them and develop hypotheses and that knowledge is a cumulative approach. (What nature of the relationship)</p> <p>b) Anti-positivists: Refuse that observing behavior can assist one experience it and perceiving it promptly. The decline that social science can initiate actual objective knowledge of any kind. (How do we know)</p> |
| Methodology | <p>a) Ideographic: Emphasis on “getting inside” by exploring and subject their life history and specific background. They presume themselves with observation, look at diaries, biographies, and people’s normal lives. (What tools to use)</p> <p>b) Nomothetic: Depends more on the scientific mechanism and hypothesis testing. They utilize quantitative tests like standardized research mechanisms, surveys, and personality tests. (What mechanism to use to know that reality)</p> |



| RAILWAY Components | LEVEL 1 | Transition Plan | LEVEL 2 | Transition Plan | LEVEL 3 | Transition Plan | LEVEL 4 | Transition Plan | LEVEL 5 |
|---|------------------------------|------------------------------------|-------------------------------|---------------------------------------|---|---|---|--|---|
| Managing Sourcing (Quality Management) | No sourcing structure | To develop a sourcing framework | Defined sourcing structure | To implement sourcing framework | Proposed sourcing standards | To establish the sourcing role | Establishment of sourcing viewpoint | To implement the sourcing strategies | Monitoring Dashboard |
| Managing Purchasing (Human Resource Management) | No purchasing infrastructure | To discover purchasing information | Defined purchasing elements | To establish purchasing practices | Proposed purchasing plan | To establish purchasing information | Having purchasing infrastructure | To implement purchasing specification | Integrated technology for monitoring purchasing |
| Managing Materials (Accreditation Management) | No materials information | To provide materials activities | Proposed materials components | To establish materials structure | Having materials data based on identified needs | To establish materials performance on the latest technology | Having materials data pool for technology trends and industry needs | To implement materials activities | Strategized materials information |
| Managing Supply (Strategic Management) | No supply capacity | To identify supply capacity | Proposed supply plan | To identify current and future supply | Proposed supply unit category | To establish measurements for supply disciplines | Having supply monitoring and continuous plan | To implement supply monitoring and improvement structure | Supply Infrastructure |

Fig. 9. The transition stages for Information System in Railway Industry

that are needed to transform principles and values into a real learning experience of a RI.

4. DEVELOPMENT FINDINGS

The contribution of this study is significant in supporting RI scenarios by focusing on the heuristic view of an industry approach to a problem-solving management issue. Furthermore, the study identifies the strategic technology transition of the decision-making process in the RI. By understanding the IS functions, these enterprise frameworks in RI are assured of competitive advantage. Moreover, the impact of the IS enhances the well-being of the RI through the integration of the technology transition approach and especially on the enterprise framework. The comprehensive sight of the study is to enhance IS skills and knowledge that suit RI needs through integrating technologies for RI. Furthermore, this research has designed an enterprise framework in the context of IR5.0 to enhance the strategic performance of IS in RI. Furthermore, the development of enterprise framework focuses on the strategic IS transition stage of the technology revolution. We have structured the transition stages for the strategic process and formalized a plan for a better management concept using IS, as presented in Fig. 9.

Based on Fig. 9, the transition stages for IS in RI need to be linked to the industry goals and needs the position for the current maturity levels across the components of the enterprise framework. The components need to be in place to put the enterprise framework into practice across the RI. Furthermore, components reflect the IS integration of

capabilities for effectively implementing enterprise framework across the RI.

5. CONCLUSION

In today’s ultra-competitive world, organizations must expose to strategic initiatives continuously and executive management. The strategy must constantly maintain a strategic plan that ensures the plans are implemented accordingly to improve impacts of the operations in completing the entire cycle from executing strategies to managing the process to achieve the desired KPIs. The strategic plan is vital to management as it allows a strong link between expansion and the endurance of the organization. In modern times, it is becoming very important for decision-makers to comprehend the key extent of IS activities, realizing the fact that introducing the idea of the strategic management that translates strategy into operational objectives drives performance. The goal of the enterprise framework is defined as the mini strategy map based on a cause-effect relationship, which eliminates ambiguity and clarifies industry responsibilities.

Implementing IS approach in RI would undoubtedly link strategic objectives of the respective themes to the activities necessary to achieve the desired results. The strategy-focused transformation with a very clear top-level enterprise framework encompassing strategies and objectives that span key organizational functions in the RI. Each component is required to monitor their KPIs for operational effectiveness and reports the progress through IS dashboarding. For RI, the cascading levels follow closely the organizational structure. However, the challenges faced have been the alignment



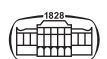
and the cascading of the top-level enterprise framework for the RI management were able to visualize and internalize the IS principles.

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